

behind the tooth. The left tooth measures 6 inches in length, $3\frac{3}{8}$ inches in width, and is $1\frac{3}{4}$ inch thick. The space between the teeth measures $7\frac{1}{4}$ inches. The limbs are very imperfect; all the smaller bones are missing; and there is only a part of one scapula. I did not find the pelvic bones.

This animal was captured about a year ago, near Lord Howe's Island.

8. Zoological Notes of a Journey from Canton to Peking and Kalgan. By R. SWINHOE, F.Z.S.

On my return from Hainan in April 1868 I visited Canton. In the market there three species of White Herons (*H. alba*, *H. garzetta*, and *H. intermedia*) were to be seen, with eyelids stitched together, walking about the counters of the bird shops—the bills of the first and last in different stages of black and yellow, changing from the winter to the summer colour—all with the nuptial plumes fully developed. Parrakeets with red cheeks (*Palæornis longicauda*?) were in abundance. The dealers told me that they were brought from the western portion of the province, down the west river. *Polyphasias tenuirostris* was often heard whistling in the neighbourhood. It has a quick undulatory flight as it flits from tree to tree, and has two other series of notes besides its ordinary call.

We pulled down the river and went on board a Customs' revenue cruizer to call on a Mr. S. Bligh, formerly a naturalist in Norfolk, who was serving on board. He had a tolerable collection of neatly prepared skins made on the Canton river. He had fine specimens of both *Herodias alba* and *H. intermedia*; and drew my attention to the fact that the latter lacked the pink garters which the former carries on the top of its bare *tibiæ*. He had also a large Goose with flesh-coloured bill and white dertrum and yellowish flesh-coloured legs; tail broadly margined with white, and belly blotted with black; apparently a race of *Anser ferus*. He had besides several of *Totanus fuscus*, L., which he assured me was very common during winter on the Pearl River. The best thing I got from him was a solitary specimen of a new species of *Porzana*, which I have lately described in the 'Annals and Magazine of Natural History' (March 1870, p. 173) as *Porzana mandarina*. He showed me a *Calamoherpe orientalis* (T. & S.), which he said was just beginning to arrive. There were certainly plenty of Reed-warblers about then; for the river-banks resounded with their notes. Mr. Bligh believed that both *Anas circia*, L., and *Anas zonorhyncha*, mihi, breed in the neighbourhood of Canton.

The Commissioner of Customs at Canton had a nice aviary, with several birds of interest in it. Of domestic things, the most curious was a full-grown Duck (cross between a Muscovy and the common Chinese or Penguin Duck) of a piebald colour, with *four* legs. The foremost pair were normal; the hind pair hung obliquely

backwards soles upward, and shook up and down with every movement of the bird, having apparently no muscular power. Among the wild captives were a pair of my *Porphyrio caelestis* from the Canton neighbourhood, and a Pelican (*P. minor*, Rüpp.) with yellowish bill and legs, which had lived in the aviary for two years or more but still retained the greyish-brown markings to its feathers. It sat for the greater part of the day on a perch, with its head back and its bill on its breast. There was another bird, which interested me most of all; and that was an Ibis said to have been winged on the Canton river. I noticed at once that it was my undetermined friend of Talienwan (Ibis, 1861, p. 261). It was very like *Ibis religiosa*, having, like it, a purplish-black bill, bare head and neck, the latter not bare to such an extent; entire plumage white, lacking the black tips to the wings and the desiccated purple plumes that adorn the back of the other. Its pectoral feathers were long and pointed, like in *Herodias garzetta*. It was about the size of *I. religiosa*, and had similar legs. I could not handle the specimen, and cannot, therefore, give measurements. I before supposed the Chinese species to be the Indian representative of the Egyptian sacred fowl *I. melanocephala* (Linn.) (P. Z. S. 1863, p. 60); but Jerdon's description (B. of I. iii. p. 768) shows that to have black quills. There seems no doubt, therefore, that our species is a novelty; and I would propose to recognize it as *Ibis propinqua*. The live specimen in the aviary at Canton, as I have just noted, did not show the peculiar dark decomposed scapulars and tertials of the two allied species, nor did the birds which I saw in Talienwan.

On my way up from Hong Kong to Shanghai, off Video Island (near Shanghai), I saw (15th May) a Black Petrel the size of a Duck, and a small flock of Guillemots. A Swallow followed us for the greater part of the day; and a *Lanius lucionensis*, Strickl., flew on board. In the grounds of the Shanghai Consulate they have a very fine pair of *Grus montignesia*, Bp., that have the run of the place. They are very tame and bold, and have lived there many years. I saw them on my first visit to Shanghai in 1858. In the bird-shops of Shanghai there were plenty of White-eyes (*Zosterops erythropleurus*, mihi), Pihlings (*Alauda mongolica*, Pall.), and Hwameis (*Leucodioptrum sinense*, L.)—also numbers of *Suthora webbiana*, G. R. Gray, caged separately and kept for fighting. The domestic Cormorant was also offered for sale, and the bodies of some small shore birds, from strings of which I was glad to secure *Ægialites geoffroyi* (Wagler) and *Æg. mongolus* (Pall.) in full summer plumage. A friend showed me a collection of fossils purchased at Shanghai. He had some fine Orthoceratites obtained from the curiosity-shops; the Chinese believe them to be natural photographs of pagodas. His collection of fossil teeth were procured at the drug-gists, where they are sold for medicine. Shanghai is a great centre for this trade; and the raw article can be procured here in quantity. In other large towns you can only get the prepared drug in a calcined state. These fossils are called *Lungche*, or "Dragon's teeth;" and the idea about them is that in olden time the world consisted of

monsters who were incessantly fighting and killing one another, until man came on the scene and initiated a more peaceful state of things by clearing the country and cultivating it. The monsters were large and powerful brutes; and in their teeth and bones existed their strength; hence the remains of these ground to powder and taken internally must give strength to the weak invalid. For the same purpose Tiger's bones are also in favour. Mr. Kingsmill had managed to get together a very nice series. He had also specimens, chiefly of fossil plants, of his own collecting.

At Chefoo, on the 21st of May, all the Gulls I saw about the harbour were *Larus melanurus*, Temm. et Schleg.

About Tientsin, on the 25th of May, Swifts were abundant.

On the 27th I arrived at Peking, and learned, to my great annoyance, that Père David had left the same morning for Tientsin on his way south. He was bound on a three years' exploring tour into Szechuen, bordering Thibet. I had counted on his assistance in working the northern birds, and his departure was a great blow to me. I nevertheless lost no time in visiting the Lazarist mission called Paitang, near the north-west gate of the Tartar city. The priests were very polite and courteous, and led us to the museum; but none of them knew any thing about the treasures it contained: the soul of the place was gone. We were escorted into a building on the left of the cathedral; and judge of my surprise when I found myself in a large room with glass cabinets all round and glass-faced tables up and down the middle, as neatly got up as in any museum in Europe. Three sides of the room were devoted to birds and mammals, the cabinets being divided by horizontal shelves, on which were placed specimens elegantly mounted on stands. The fourth, or side through which we entered, exhibited astronomical and other instruments, and an assortment of minerals. The tables contained Butterflies and Beetles pinned and arranged. The zoological specimens were for the most part from the neighbourhood of Peking, and had been collected by the Père Armand David. The zeal and enthusiasm of the Abbé for scientific pursuits must indeed be great to have enabled him to accomplish all we saw before us, in a remote place like Peking, in the space of four and a half years; and how commendable the liberality of a religious mission to give so much space, labour, and money for providing a kind of instruction to the youths of their school which in England and Europe generally is considered of a very secondary and even unnecessary character! I trust many of the Chinese pupils will be won over by the attractions of the museum to the study of the natural history of their country; but I fear it is a vain hope. The priests told us that the natives took very little interest in the prepared specimens. I paid during my stay in Peking three visits to the museum. The priests were surprised at my coming so often; but I could have spent weeks there to advantage. All the species that Père David had collected were not there. They told me that he had sent large collections to Paris, and that none remained but those here exhibited. How I longed for the worthy

Father himself to go over his treasures with me. I jotted down a few notes, which I will here insert.

A very fine series of Eagles and Hawks; and among the former a large *Gypaëtus barbatus* with pale underparts. A female *Cercus melanoleucus*, of a rich brown colour.

Troglodytes europæus (?). Apparently the same as the Japanese species, *T. fumigatus*, Temm.

Pericrocotus brevirostris, so marked.

A Redbreast with red head and neck, with black line across breast, grey sides, red tail; Robin green above, with white belly = *Lusciola akahige* of Japan.

Lanius excubitor, var., in different stages of plumage.

Lanius phœnicurus, with the head dull brownish, forehead grey = *L. lucionensis*; and one specimen of the species I have lately described from Szechuen as *L. waldeni* (P. Z. S. 1870, p. 131).

A Warbler from Mongolia, like *Sylvia curruca*, with black ear-coverts and whitish outer tail-feathers, marked *Sylvia cinerea*.

Locustella certhiola (Pall.), from the neighbourhood of Peking; and a Warbler from the same locality like *Nisoria undata*, Bp., but much less banded on the underparts.

Passer ouratensis, with black round the bill and down the throat, from the Oulashan; also *Passer petronius*, L.

Mecistura ouratensis. Two young examples from Oulashan.

Parus ouratensis. An ugly dusky-backed species with a black crown, also from Oulashan (= *P. sibiricus*).

One specimen of my new *Ægialites hartingi* (P. Z. S. 1870, p. 136).

Another large Sand-plover, with white head and neck, red breast succeeded by a black band, white belly; above brown. This I take to be the full summer plumage of *Charadrius veredus*, Gould.

The most interesting thing in the collection, of which M. David had procured but the single example mounted in the Peking Museum, was a peculiar Swan, bought in the flesh in the market at Tientsin. M. David did not acquire a duplicate; and it has therefore not been forwarded to Paris. The priests at Paitang gave me permission to describe it; and as it is such a remarkable species I regard it as a duty to make its existence known to the Society. It is smaller than *Cygnus bewickii*, Yarr., with the neck about a third shorter, is entirely white, with the bill vermilion colour having a black dertrum, and the legs and feet orange-yellow. Specimens of *C. musicus* and *C. bewickii* were ranged alongside. Its nearest ally, of course, is *C. coscoroba* of Chili; but it is larger than that, and has the wing white throughout. It would appear to be the northern representative of that curious form of Swan; and I would propose to name it, in honour of its discoverer, as the *Cygnus (Coscoroba) davidi*, n. sp.

The mounted Mammals were:—An adult and a younger sample of a Leopard from the western hills—doubtless the *Leopardus chinensis*, Gray, founded on skulls brought from Peking by Dr. Lockhart (P. Z. S. 1867, p. 264), which, from skins of old and young brought

home by myself, I showed to be the same as the *L. japonensis*, Gray, P. Z. S. 1862, p. 262 (*vide* P. Z. S. 1870, p. 4).

Cervus capreolus, L., var. *pygargus*, Pall. A specimen without horns, white rump and tail; from Pechili (the province in which Peking is situated). The French legation had a number of these alive, and they bred in confinement. The British legation had a couple of bucks. They are small Deer, of a deep yellowish-brown colour finely speckled with black, the rump marked as before said. Their horns are covered on the beam with short spinous processes.

A long-tailed *Capricornis* from the western hills.

Antelope gutturosa, Pall., from Mongolia.

Lepus tolai, Pall., from near Peking.

Gerboas from Seu-en-hwafoo (marked *Dipus jaculus*, Pall.).

An olive-brown Squirrel (marked *Myoxus cinereus*).

A Badger very white about the neck.

A small *Arvicola*, $3\frac{1}{2}$ inches long, 1 inch tail; back red, with black dorsal line; sides and underparts white.

Mustela sibirica, *M. foina*, and light-brown Mole-rat.

Mus decumanus, *M. minutus*, and a Hedgehog.

A *Spermolegus* marked as a *Cricetus*.

A small short-tailed Fox.

A kind of Wild Cat closely allied to *Felis catus* of Europe.

And a fine pair of horns of *Elaphurus davidianus*.

These were all the Mammals exhibited. M. David must have consigned most of his collections in this branch to the Paris Museum.

The dust and heat were insufferable; and the great city is of such a huge extent that there was no getting out of it for a run into the fields without making a day of it. I was tired of watching the Rooks and Sparrows disporting themselves among the trees of the legation, and the myriad Swifts that were constantly skimming the air above, and of listening to the melancholy moaning of the Pigeons that flew in flocks round and round. (The Chinese attach little hollow gourds, or light reed-pipes slit at their tops, to the base of the Pigeon's tail. These face the wind and produce æolian music as the bird flies. In every flock two or three Pigeons carry these whistles.) Closed in by its lofty walls, one feels buried in Peking. It requires a gale to make a free circulation of air; and then the dust overwhelms you and penetrates every part of your person and every nook of your house. To lay the dust many of the main thoroughfares are watered with human urine for lack of water. One longed for wings to rise above the close and unwholesome atmosphere, and envied the Swifts.

On the 2nd of July I was enabled to find relief in the western hills, where large temples abound, situated at all heights, in picturesque places, and where among the trees and grassy slopes the cool breeze searches you out and makes you feel a different being. The Europeans in Peking find life insupportable in the city during the great heat of the summer; and most of them spend the greater part of that season among these hills—parties of them uniting and fitting up the native temples. Some go to the nearest hills (twelve miles

west of the city), others further westward. The diplomatic corps of the various nations, and even the missionaries, all retreat, the junior members of the legations taking it in turns to reside in town to report on occurrences and to keep up communications. Thus by the end of June the members of the British legation had migrated to their summer habitat; and I was glad to avail myself of an invitation to follow. The temple I visited on this occasion was the Black-Dragon Temple, over the first range of hills to the left of the gardens of the Summer Palace, and about twenty miles from the legation in Peking. The Black Dragon is the deity the Chinese appeal to on occasions of great drought; and such an occasion had occurred before my arrival in Peking. The mandarins were in great trouble because the heavens proved obstinate. They prohibited the slaughter of animals for food and tried every form of prayer, but in vain. At last one of the wise men suggested that the ancient manner of appeasing the wrath of the Black Dragon was to offer him a Tiger's skull. Peking was searched for the article; but the medicine shops had it only in the form of powdered drug. The Inspector-General of Customs asked if a Tiger's skin would do as well, as he had one which he would sacrifice for the purpose. Nothing but a skull was acceptable. At last one was secured, and with great ceremony carried to the temple and sunk in the pretty pool overshadowed by trees within its walls. In the evening clouds began to gather, and the next day there were copious and refreshing showers. I was in hopes of finding this skull, as I was very anxious to get a skull of the northern Tiger in order to determine whether it be the same species as that of Bengal; but some one had been before me, the skull was gone.

On our way outside the Tihshing Mên, or "Gate of Victory" (the gate the British troops occupied in 1860), we came upon a large patch of reeds and rushes with its noisy inhabitants. They consisted of two species of reed-birds—the *Calamoherpe aëdon* (Pall.), and a smaller bird something like our Reed-wren. The latter was very abundant, chattering in all directions; but it was not easy among the reeds to procure specimens. I shot a female; and, judging from her bare belly and worn appearance, she must just have left the nest. The male hopped down a rush to look at her; and several others appeared, to learn the cause of the disturbance. Before I had reloaded they had all retired again. I had not more time to devote to them. The specimen procured is a Reed-wren allied to *Calamoherpe arundinacea*, Gmel., and *C. dumetorum*, Blyth, in colour, but may at once be distinguished from the former by the band of dingy cream-colour that crosses the loreal space extending from the nostril to the eye,—and from the latter by its white throat and breast; it has a thicker bill, shorter wing with longer first primary and different proportions of the other primaries, more graduated tail, and paler legs. I will introduce it as the

CALAMOHERPE CONCINENS, sp. nov.

Upper parts olive-brown; lore cream-white; cheeks and sides of

neck light ochreous brown; wings and tail light brown, edged with reddish olive-brown; underparts, axillaries, and carpal edge cream-white; under edges of quills light salmon-colour; tibials and vent yellowish brown; bill brown on upper mandible, ochreous on lower; legs ochreous flesh-colour, browner on the toes, with brown claws.

Length 5·2 inches. Wing 4·1, first primary measuring ·55 in length and being ·8 shorter than the second, which is ·2 shorter than the third, which is ·05 shorter than the fourth, which is slightly longer than the fifth and the longest in the wing. Tail 2·3 inches, much graduated, the outer rectrix being ·5 shorter than the middle; subcaudal coverts fall ·85 short of end of tail. Bill in front ·45, to rictus ·67. Tarse ·84. Outer toe rather longer than the inner; middle toe ·5, its claw ·21; hind toe ·33, its claw ·25.

On the 2nd of July we walked across the valley to the range of hills about six miles distant, to a magnificent temple called *Tacheo-sze*, where the Prussian legation had temporary quarters. The Lark of these intermontane valleys is a crested species—the *Galerida leautungensis* (mihl). They rose on all sides about us, making the country resound with their short sweet notes. They seldom rose more than forty or fifty yards from the ground. Their more frequent custom is to sing on the ground; and then their notes have quite a ventriloquistic effect. This was their breeding-season, and they were very merry. I saw them dusting themselves in the road as Skylarks are wont to do. The other conspicuous bird of these valleys is the Black Drongo, *Dicrurus macrocerus* (Vieill.). The willow is the chief tree; and among the groves of them the Black Drongo shares habitancy with the Sparrow, *Passer montanus* (L.). A pair of the former had a nest on the slender top twigs of a willow; one bird was sitting, and I watched its mate relieve it and take turn. Large numbers of natives passed, carrying baskets of apricots and peaches; the former were nearly out of season, the latter just coming in. Damsons were also appearing. Siskins, (*Chrysomitris spinus*), were breeding among the apricot-orchards around Tacheo-sze; and Goldenwings, *Chlorospiza sinica* (L.), old and young, were flitting about in small parties. On a mound by the side of a trickling stream in the woody hill-side I noticed a Wood-Wagtail, *Nemoricola indica* (Gmel.), pulling at a worm. It would not be disturbed by my approach. I had several opportunities of watching this bird, as it spends its summer among these western hills. It raises and depresses its tail slowly. It sings from the bough of a tree, moving the hinder part of its body from side to side; its song consists of a long wailing whistle-note, which it sometimes doubles. In flying it rises up and down, but utters no note with every jerk as do the true Wagtails. It is extremely tame. I did not find its nest.

On the 6th of July we visited a large cave about a mile from our temple. It is on the side of a low hill which stands alone. Its mouth is about 20 feet in diameter, opening into an abyss floored with broken rocks, among which water has collected. Its internal dimensions are large; but it offers no means of entrance. Along the

walls of its interior the rock was broken into shelves; and here the Rock-pigeon (*Columba rupestris*, Bp.) resorted in hosts to rear its young, and find a cool retreat from the noonday sun. A shout and a few stones thrown in brought them out in swarms. The Sparrow, of course, also availed itself of so satisfactory a site. A pair of Kestrels had a nest on the cliff overlooking the hole; and several species of Hawks were about. In this neighbourhood I also observed Choughs, *Fregilus graculus* (L.). Their peculiar, loud, discordant notes were quite enough to inform you of their approach.

On the 7th we got donkeys and crossed the hills, making south-eastwards to the temple Ling-shan-sze, where the British minister resided. This is a very fine temple, situated on a lower slope of the range that faces Peking, and commands a fine view of the plain with the great city in the distance, and the lower wall to the south of it enclosing the Nan-Haitsze, or "Southern-Marsh" hunting-grounds of the Emperors, celebrated among zoologists as the only known habitat of the *Elaphurus davidianus*. To the north can be traced the various parks and gardens of the Emperor's summer abode, in which are confined the *Cervus xanthopygus*, M.-Edwards, the *C. mantchuricus*, mihi, and the *Capreolus pygargus* (Pall.). To the latter Europeans can get admission; but the "Southern Marsh" is closed against them: it is of large extent, and has east and west gates, at both of which troops are quartered. Foreigners have taken these guardians by surprise, and ridden in before they could close the gates. But beyond the barracks of the household cavalry there is nothing to be seen but low woods and marshy places—in fact, a neglected expanse abandoned to the *Elaphurus*, some few *Cervus mantchuricus*, and *Antilope gutturosa*, Pall. Being informed of the interest the Society took in this animal by its indefatigable secretary, Sir Rutherford Alcock moved one of the high ministers to procure him some of the fawns alive. Four were obtained, but they were so shaken by the cart that conveyed them to the legation that one died. The mandarin sent a fifth. The minister desired me to look after them, and I had left them in the legation doing well; but the day after my arrival at Ling-shan-sze word came that another had died; and on the 9th I was on my way back in a cart to the city, which I reached after a five hours painful jolting. The young *Elaphuri* were being fed on milk and bran accompanied with fresh-cut grass; two of the three survivors were suffering from diarrhœa, and a third died. I was in despair, as the remaining two looked sickly. At last I observed how fond the two living *Capreoli* in the legation were of sprigs of the elm that abounded in the grounds, and I tried my young charges with that. They enjoyed it and began to brighten, and I had no more trouble with them. The elm-branches were given to them as daily dessert; it was the over-feeding on damp grass that was killing them. The young *Elaphuri* came into our hands when they were about six weeks old. They had a very calf-like look, and were very unsteady on their legs. Their tails were not, as in the adult, merely tasselled at the end like a Donkey's, but were covered with hair uniformly bushy throughout. Their coats were

of a deep yellowish brown or fawn-colour, spotted all over with large spots of white. As they grew older the spots began to disappear, and the hair to grow longer and browner. When I left Peking in October scarcely a trace of spots was left, and the animals were steadier on their legs, but still gawky and awkward. I congratulate the Society on having got buck and doe both safe and alive in the Gardens.

Fairs are held twice a week at different temples in the city, and are attended by large numbers of well-dressed people. The booths are neatly got up; and there is always a good display of toys, nick-nacks, and flowers; but I did not see much to attract in the bird line. A few of the Chinese pet-birds were offered for sale, and these either young or in bad plumage. Some are shown in cages, others attached by a slipstring to a stick with a metal point at its end for planting in the ground or in a flower-pot. One of their curiosities was an albino *Lanius bucephalus*.

On the 25th of July I observed that all the Swifts that were breeding in the roofs of the various buildings in the legation had cleared out their young and deserted their nest-holes. In passing the western gates of the Chinese city, of the thousands that swarmed like bees round their turrets a few weeks ago not one was to be seen on the 28th of July. In the morning and evening many still sported about at this date in the air over the legation grounds. The young leave their nests without any loitering or trying of wings; but for some time their parents feed them on the wing. The old birds are fond of screeching as they fly, especially in cloudy weather. Heavy rain closed July; and on the return of fine weather (8th of August) not a Swift was to be seen; the myriads that swarmed in the air of Peking during the fearful dry heat of July had all disappeared. This accounts for my not having met with them on my former visit to Peking in the autumn of 1860; they had left before we arrived. No House-martin (*Chelidon*) frequents the city; and I only once saw a couple passing over when out on a trip in the country. *Hirundo gutturalis*, Scop., and *H. daurica*, Pall., are the only Swallows that court the protection of the Pekinese householders, while *Cotyle riparia* (L.) enlivens their river-banks. The Swift is closely allied to our home friend *Cypselus apus*, L., but differs sufficiently to be distinguished as an Eastern race:—

CYPSELUS PEKINENSIS, sp. nov.

Back, nape, and underparts as in *C. apus*, the white on the throat more extended. Crown, rump, tail, and wings light brown with a slight coppery-pink gloss. Primary coverts, shafts of quills, and outer webs of wing—primaries blackish. Forehead very pale, with a whitish upper edge to the black patch in front of the eye.

♂. Length 7 inches; wing 7; tail 3, depth of fork 1; wing reaching beyond tail 1.2. Legs deep purplish brown, with black claws. Inside of mouth flesh-colour, with a purplish tinge, especially in lower jaw. Skin round eye and bill blackish brown tinged with purple. Iris bright brownish black. Judging by the bareness of the breast and belly, both male and female sit on the nest.

On the 9th of August I went out again to the neighbourhood of the Black-Dragon temple, and the following day started with some friends for the *Meaofungshan*, a temple built like a fortress on a hill 1500 feet high. The road lay across the valley and over the range (1300 feet) on which the Tacheo-sze temple stands, along a plateau and through an orchard-planted ravine. On the grassy parts of the hills *Emberiza coides*, Brandt, occurred frequently, singing sweetly a Robin-like song; but about the orchards and plantations of oak there were few birds. The ear was everywhere deafened by the noisy Cicadas. In the ravine about the foot of the *Meaofung* hill the chief species was a brown *Cicada* about $1\frac{1}{2}$ inch long, known to Europeans in Peking as "Keenlung's Nightingale." Its cry may be syllabled "Meao-meao-meao-may ——" It is said by the Chinese to have been introduced from Jehol into this neighbourhood by the Emperor Keenlung, who took great pleasure in its note. The noise it makes is perfectly bewildering, and one cannot but feel pity for the Emperor's unaccountable taste. From the small village at the foot of the hill it was a painfully fatiguing climb up the winding stone steps to the temple. This temple is considered especially sacred in the eyes of the Pekinese, and twice each year is visited by pilgrims, who make the journey, a distance of thirty-five miles from Peking, on foot, prostrating themselves at each step. There were several kinds of birds about the woods on this hill. Kestrels and *Erythropus amurensis*, Midd., were about in numbers; and in the pine-trees about the temple I watched with pleasure the movements of the little *Sitta villosa*, Verreaux, and the Crossbill. The early morning of the following day was cold, and a high wind was blowing. Choughs and Kestrels were rising and falling in the air at one another against the wind. In the wood below, the *Erythropus* was feeding its fledged young on the branch of a tree. On the rocks below the temple two Squirrels were active, chasing one another and fighting. I secured one; it was brown, with a long brown bushy tail and whitish underparts; its ears were rounded, and not plumed; and its face was more sharp and Rat-like than in ordinary Tree-squirrels. It resembles in colour the *Sciurus chinensis*, J. E. Gray, from Ningpo; but the latter is a smaller animal, with rounder head, and more arboreal in habits. The Peking Museum had several specimens of the northern species; and M. A. Milne-Edwards has lately figured it, in his 'Recherches des Mammifères' (in course of publication), as the *Sciurus davidianus*. We returned by a long circuitous route, which took us eastward through a long gully to a *cul-de-sac* among the hills, to get out of which we had to ascend the *Shipa-park*, or "eighteen flights" of stone steps. The descent took us to the banks of the *Wénho* (river). Our course thence lay north-westwards through the valley to the Black-Dragon temple. It was a long, fatiguing walk of twenty-eight miles. On our way among the bushes on the hills we heard the *Garrulax*-like note of *Pterorhinus davidi*, mihi, and saw small parties of *Rhopophilus pekinensis* (mihi) flitting along the tops of bushes singing sweetly.

On the 13th of August we paid another visit to *Tacheo-sze* (the

Prussian temple), but beyond Crossbills and Goldenwings we saw nothing of interest. The Crossbills were usually on the tops of the pine-trees feeding on the cone-seeds, and twittering in notes much like those of a Sparrow.

LOXIA ALBIVENTRIS, sp. nov.

Small; like in colour to *L. curvirostra*, L., but differing from all the known species in having the abdomen and under tail-coverts white, the latter with large central arrow-head brown spots. Under quills whitish.

Length 6 inches; wing $3\frac{5}{8}$; tail 2; tip of wing to end of tail .6. Iris brown; bill brown, light horn-colour along the tomia. Legs, toes, and claws blackish brown, washed with pink on the soles. Called here *Keao-tsuy* (twisted bill).

On the 14th of August, with two donkeys to carry our baggage, we walked northwards across the millet-plain twenty miles to Chang-pingchow, and put up at an inn near the west gate. This town contains a Taotai, who has charge of the tombs of the Ming Emperors, situated in a neighbouring valley, and called the *Shih-sán-ling* (or thirteen eminences). In the early morning we got donkeys, and rode to the celebrated tombs. Two miles of road brings you to the commencement of the sacred precincts, marked by a high open gateway of three arches, whence leads a paved way for a mile to a brick gateway, also of three arches; a mile further and you reach a single bronzed arch with a large tablet inside, raised by the Emperor Keen-lung of the present dynasty, who repaired the tombs; then a series of animals in stone flank the way on either side, one kneeling and one standing, of the following in order—the fabulous *Kelin*, Lion, Camel, Elephant, *Tsowshow* (Lion with scales and hoofs), and Horse, succeeded by two warriors and two statesmen. Three triple arches are next passed, and you have a cultivated plain before you bounded by hills, at the feet of which you can count, as you gaze round, thirteen enclosures of various extent, with what looks like a painted temple with yellow tiling in each, surrounded by trees. A stream crosses the plain; and the ruins of a marble bridge show the course of the road from the arches. The tomb of the Emperor *Yunglo* was the largest and best wooded; so we bent our steps along the broken stone causeway to that. The porter in charge was called and let us in. We were led into the hall where the shrine was placed,—an enormous room 70 paces long by 33 broad, and about 60 feet high in the centre, the sides a little lower; the ceiling was chequered and painted, a good deal like that of the Elgin Gallery in the British Museum, and supported by huge pillars of single timber, each 12 feet in circumference, throughout its great length. There were eight of these pillars. In rear of this large hall is the great mound in which Majesty's bones are entombed. After all this the Society will expect to hear something of the ornithology of the place; but birds were scarce. Tits (*Parus minor*, Temm. et Schleg.) and *P. kamtschaticus* were commonest; but I looked in vain for the Crested Cole-tit (*P.*

pekinensis, David). *Sitta villosa*, Verr., occurred (itself almost a Tit in habits) running along the slender twigs of the trees and hanging about the leaves, fighting and pursuing one another, and at times giving utterance to a lively chatter a good deal like that of *Lanius lucionensis*, Strickl. I was enabled to get several specimens. The males differ from the females in having a black cap. It has a very close ally in *Sitta canadensis*, L., of North America. A pair of *Ruticilla aurea* (Pall.) had hatched a brood of young in the grounds, and were feeding their spotted fledglings on the stone parapet. The sun was setting, and we were leaving the place annoyed at our bad luck, when an Owl popped out of its roost in the bosom of a tree. I winged it; and after a hunt we secured a fine specimen of a Wood-owl, which seems to be the Himalayan race *Syrnium niviculum*, Hodgs.—♀. Length 16·5 inches; tail 7·25; wing 11·75; wing-tip to end of tail 1·75. Irides black. Skin round eye yellowish flesh-colour. Bill wax-yellow with tinge of green. Soles of feet yellow; exposed part of toes greenish yellow, as also are the bases of the claws, rest of claws blackish brown.

The distance from Changpingchow to the tombs is about nine miles.

On the 19th I crossed the hills and paid another visit to H.M. Minister at Lingshansze temple. Several temples stand on higher positions up the hill-side, and many of them were occupied—one by the American legation, another by the Chaplain to the British legation, and others by the secretaries and students also of our legation. These were all attainable by stone steps winding through the ravines and over the hill-sides. The ravines were well planted with trees, of which the chestnut-leaved oak was most in abundance; its acorns support the Pigs, and the acorn-cups yield a black dye. The *Kæhreuteria flata*, Bunge, with its popping pods, was also plentiful, and the *Sophora japonica* or locust-tree. This last is the commonest tree in the city of Peking, and is sadly infested with a green Measure-worm, which develops into a brownish-mottled moth. The tree bursts into leaf in spring, and in a few weeks stands denuded, every leaf having been eaten by this caterpillar. It shoots again into leaf, and is again stripped. Three efforts are made by the tree in the year, and three times it is robbed of its leaf; and yet the tree is abundant and does not perish. In Boston, U.S., a similar worm is said to make great havoc among the locust-trees of that city; and to put a stop to it the citizens imported the Sparrow (*Passer domesticus*, L.); but *Passer montanus*, L., abounds in Peking; yet the Measure-worm multiplies in spite of it. A scented *Artemisia* spreads everywhere on these hills, scattering a dust-like yellow pollen. A sprig of this is placed in the headgear between the ears of Mules and Donkeys to keep off the blood-sucking flies that swarm on the backs of the ears of the poor beasts. The plant is twisted by the country people into ropes, which are burned to ward off mosquitoes. In this neighbourhood the commonest *Cicada* that deafens you is the green one of the south, about an inch and a quarter long. It keeps on crying "Kwai-kwai," &c., for some time, and then finishes with a prolonged "sze." A second is a large dark-brown species called

"Knife-grinder," also of the south, which sustains one note throughout, sounding like the grinding of a knife on a wheel. A third is smaller, also dark-coloured, with yellow lines on its face, and utters a single bell-like sound, heard often at night as well as in the day. All these three visit the city.

It may be that the presence of so many Europeans with guns had driven the birds away; but in the hill-side woods insects seemed to hold complete sway. In the early morning there were some signs of feathered life, and a few songs were to be heard; in the noonday no life stirred, you felt choked with heat and deafened with *Cicadas*; but the evening came on fast, the Hawk and Crow tribes were active, Chukar Partridges might be heard chuckling in the grassy hills above; and as darkness stole on the Goatsucker would start into life, with its continued "chuck-chuck" note, and commence pirouetting over the trees. I shot one of them on the 31st of August: it was moulting its quills; but I found it to be *Caprimulgus jotaka*, T. et S., as I had suspected. Its remarkable note, uttered at nightfall and the night through, attracts the notice of every visitor to the hills, and they generally attribute it to an Owl. The Chinese give no help in explaining what the bird is, as they call it the *Teay-shoo-pe*, or "Bark of the Iron-tree," from its bark-like appearance, I presume, when it lies along a branch at roost during the day. By the end of the first week of September the Goatsuckers had all disappeared.

On the 1st of September we went out to look after Partridges. We kept along the plains, and did not see a bird. A Quail or two was all we saw in the game line. The trees were full of *Phyllopneuste sylvicultrix*, mihi, and *P. plumbeitarsus*, mihi; and some *Reguloides superciliosus* (Gmel.) were about. A species of Scorpion was common under stones, attaining a length of 2 inches. It frequently finds its way into houses; and its sting is poisonous. I was told on good authority that if surrounded by a fire this Scorpion turns its tail up and stings itself in the head, causing death. I was not inquiring enough to try the experiment.

I will here insert the few notes I made on specimens procured in the hills.

Tchitrea incei, Gould, ♂. Length 9.25; wing 3.6; tail 5.4, central feathers .6 longer than the others; wing-tip from end of tail 1.1. Bill, legs, and eyelid fine cobalt blue. Inside of mouth greenish yellow. Testis very large. Skull large, with difficulty drawn through the neck. This bird was shot at the end of May, and, from the state of its nasal organs, was prepared to breed; and yet the long feathers of its tail were not developed as in autumn. On the 7th of September I got a full-plumaged bird of the year. It had the brown bill and feet and light plumage analogous to *Tchitrea principalis* in the same stage. The cry of the adult bird is loud and chattering, similar to many of the notes of *Cyanopica cyana* (Pall.).

Caccabis chukar, Gray, ♂. Length 12.25 inches; wing 5.75; tail 3.3, of 12 graduated feathers rounding into a semicircle when ex-

panded; tip of wing to end of tail 3.1. Bill and skin round eye pink or coral-red; iris red sienna; legs lighter pink red, with pale soles and brown claws. This bird was shot on the 5th September. A party of them were feeding in a millet-field at the foot of the hills. They, on alarm, at once took to the hills, dispersing among the rocks, and calling to one another. Their note is a chuckle, "kok-kok-kok," the syllable constantly repeated. When pursued they at once run up the hills; and if the hunter wants sport, he must get above his birds, when they can be made to take wing. It is a great scramble to catch a wounded bird. The Pekinese call them *shih-ke-tsze*, or "Rock-fowl."

Picus poliopsis, Swinh., ♀. Iris bright chestnut-red. Bill blackish brown, asparagus-green at base, with which colour the whole of the bill is washed. Legs greenish brown, ashy yellow on soles; claws brown, with pale bases. This species appears to be rare about Peking. I only saw one other specimen of it during my stay. It is a second species of the subgenus *Hyopicus*, of which *P. hyperythrus* is the type. It differs from its Indian ally in having its underparts yellowish brown instead of chestnut, the cheeks and sides of neck being snuff-coloured. The crimson of its rump mounts to the belly. It is rather larger in size, and is more banded with white on the back and scapulars. The white spots on the head of the female are much larger. I considered it a variety before; I think now, on seeing a third example, that it is well entitled to specific rank.

Hemichelidon sibirica (Gmel.), bird of the year. Breast and flanks confusedly streaked and spotted with deep greyish-brown. Upperparts spotted with pale ochreous, lesser wing-coverts tipped with the same. Two adult specimens from Siberia of this species, kindly sent me by Dr. v. Schrenck of St. Petersburg, are paler than Chinese examples, but otherwise similar.

I will take the opportunity of here introducing two species from North China in my collection, which appear to be new.

ARUNDINAX FLEMINGI, sp. n.

The small species of reed-bird that Mr. Fleming, R.A., brought from Tientsin in 1861 seemed to answer to the description of *Salicaria cantillans* of the 'Fauna Japonica;' and I included it in my China list under that name. I have now the Japanese species before me, and find the two birds quite distinct. The wing of our bird shows a different proportion of quills; the tarsi and hind toe are much shorter, and the hind claw and toes much weaker. It is smaller in every way, and differs in its coloration.

Upper parts light brownish olive, eyebrow and cheeks pale ochreous, lore creamy white, with an obscure brown streak between it and the eyebrow; throat and middle of belly white. Underparts primrose-yellow, tinged with buff, strongly on the vent. Quills and tail light hair-brown, margined with light brownish olive. Bill brown on the upper mandible, except its tomia, which, with the lower mandible, are ochreous yellow. Irides blackish brown. Legs and toes ochreous flesh-colour.

Length about 4·5 inches; beak in front ·35, from rictus ·52, depth at base ·13, breadth at base ·15; tarse ·83; middle toe ·55, its claw ·18; hind toe ·35, its claw ·22; wing 2·35, fourth and fifth quills equal, sixth a trifle shorter, first 1·1 shorter, second ·35, third ·6; tail 2·1, of twelve feathers, the penultimate ·5 shorter than the eight centrals, which are equal, outer rectrix in the specimen not full-grown.

I have also an *Emberiza* that Mr. Fleming brought from Tientsin, which I registered before as *E. stracheyi*, Moore, but wrongly. I have since procured a specimen from the country near Amoy, shot in December 1867, which has rather a larger bill; and I have a bird from Père David, taken at Peking on the 12th May 1867, with a shorter and rather smaller bill. They are all three males. The Tientsin and Peking birds are in summer plumage, and have the whole head and throat black, with a broad line of white down the centre of the crown, a broad white eyebrow, and a broad white moustache; on the under neck, below the black throat, a large white spot occurs; and again below this comes the rufous pectoral band. The Amoy bird was shot in winter, but still shows much black on the throat. I suggest for the species the name

EMBERIZA TRISTRAMI, sp. nov.

Crown black, dividing at the occiput, and running in a broad line down each side of nape; at the division on the occiput a large white spot occurs; and a little olive tips the central crown-feathers, suggesting a central streak, in immature plumage. Eyebrow and long moustache-streak white, with a splash of yellowish olive, which marks also the lores. Lores, under the eye, and ear-coverts brownish olive, a black line running from the hind corner of the eye round the ear-coverts. Throat yellowish brown, more or less marked with black. Upper parts light yellowish brown, with an olive tinge; the black nape-lines change into deep rust-colour and continue to the centre of the back; scapulars and lower back with broad centres to feathers black, flanked with rust-colour. Rump and upper tail-coverts bright rust-colour; the two central rectrices brownish ferruginous; the fifth and fourth brown, rust-coloured on the outer web with light yellowish-brown edging; the third of somewhat lighter brown, with a small white spot on the inner web near the tip, which is also white; the second, with half the inner web white, running from half an inch from the base along the shaft to the tip; first or outermost feather white, except a brown mark along the outer web encroaching on the inner towards the tip; all the unmentioned parts of the last rectrices are brown. Wing-coverts blackish brown, the lesser broadly margined with light olive-brown, light ochreous at their tips; the greater edged broadly with brownish ochre, those covering the tertiaries being rust-colour, with black median mark; winglet deep brown, with rusty edges; primaries hair-brown, the first quill edged with white, the next few with pale yellowish brown, gradually assuming a rust-colour towards the innermost

quills; tertiaries blackish brown, broadly margined with rust-colour, which increases inwards until it predominates over the brown.

Underparts.—A white spot succeeds the dark throat. Breast and flanks rusty buff, with darker median streaks of the same on the former, and blackish streaks on the latter. Belly, vent, and axillaries pure white.

Bill somewhat finch-like, brown on upper mandible and on apical third of lower; basal portion of latter flesh-colour.

Legs, feet, and claws yellowish flesh-colour; the last curved and sharp.

Length about 5·5; wing 2·9, the four first quills nearly equal in length; tail 2·85, composed of twelve rectrices narrowing towards their tips; bill in front ·4, depth at base ·23; tarse ·7, hind toe ·3, its claw ·27.

The description is taken from the male procured near Amoy.

We left Peking on the 17th September by the Tihshing gate, and, passing the towns of Tsingho and Shaho, put up for the night at Changping Chow, twenty-five miles from town. Before reaching our resting-place, we strolled under some willows, saw two Orioles (*Oriolus chinensis*), and secured a female *Turdus pallidus*, Gmel.

On Sept. 18th sent our carts on to Shihshanling (Ming tombs), and walked along the hills at the back of Changping Chow, that overlook the valley of sepulchres. Saw a flock of Chukar Partridges jumping up the rocks, and put up two Bush-quails, *Turnix maculosa*, Temm., in the valley among the beans. Wheat was being sown, sorghum and other millet being gathered; buck-wheat was in the ear; and the small beans planted between the rows of sorghum were ripening. Large numbers of Kestrels were flying and hovering about. Their movements struck me as peculiar; and on shooting a male we found the species to be a race of *Falco cenchris*, Naumann. We procured on this occasion an adult male, and in the Western Hills a young male. They agree in size and form with *F. cenchris* of Europe; but the adult male has all the wing-coverts grey right up to the scapulars, most of them narrowly edged with rufous. The adult has the inner or short primaries broadly bordered at their tips with whitish, rufous in the immature, and wanting in the European bird. Both adult and immature have the white on the under quills $3\frac{1}{4}$ inches short of their tips; in the European bird it advances one inch nearer the tips. I will note this Eastern race as var. *pekinensis*. It will probably be the bird that winters in India.

Among the trees of Yunglo's tomb I was attracted by a loud shaking cry I had never heard before; and while wondering what it could be, I saw a bird like an attenuated Jackdaw fly across and fix on the trunk of a tree. *Picus martius*, of course! My heart throbbed violently; but it was no easy matter to bring him down, the shot had such little effect on him. One of my comrades helped me in the pursuit; and we at last secured the noble fellow: iris reddish white. I loitered about till dusk; and when nearly dark, something flapped violently across the avenue. Crossing under

the trees, I could just distinguish the outline of a large smooth-headed owl on a bare branch against the sky. I bowled him over, and found him to be a *Syrnium nivicolum*, Hodg., again—the species I had got here on my former visit. The other birds procured were a Green Woodpecker (*Picus canus*), a Pied Woodpecker (*Picus mandarinus*), a Titlark (*Anthus agilis*), which was common about the trees, and a couple of Nuthatches (*Sitta villosa*, Verr.).

The night of the 19th we passed in a one-roomed cottage, dignified by the name of inn, near Yunglo's tomb. It was like the stall of the old cobbler, "which served him for kitchen, for parlour, for all." I will say nothing of the horrors of the night, or of our personal appearance in the morning. What I lamented was the blackened state of my specimens from the constant fumigation they were subjected to. On rising we were saluted by the notes of a *Picus scintilliceps*, mihi, from a neighbouring tree. We had heard talk of a forest existing over the mountains, and we got a guide to lead us to it. Unfortunately the term for forest in Chinese means any thing from a clump of trees to a large expanse of wood; so that after clambering about the rocks and wading to our necks in damp grass for some hours, our guide brought us to a standstill at a group of firs, and told us that was the largest forest on these hills. We retraced our steps in disgust, but not till we had renewed our acquaintance with *Rhopophilus pekinensis* (mihi). It was whisking about its long tail on the tops of bushes, uttering a loud whistle. Its eyelid was madder-red, its iris washed with yellow; upper mandible light brown, lower yellowish white; legs brownish flesh-colour tinged with yellow.

From the Ming tombs to the town of Nankow, at the gate of the mountain-pass which leads through the inner portion of the Great Wall, there was a good road for the first six miles; the remaining six were fearfully stony and rocky, and the jolting of the cart endangered one's bones. A gentleman from California put up at our inn, and we spent an instructive evening together.

From Nankow, the gate that opens into the pass, to Shato, beyond the gate at the top of the pass, is fifteen miles; but the road is blocked with stones and lumps of rock, and our carts had to be unpacked and helped through with extra animals and men, while our goods were transported on donkeys. My two companions and I walked and rode on horseback. A male Sparrow-hawk (*Accipiter nisus*), with clear yellow irides and long yellow toes, was all we bagged; but we were delighted by witnessing the stoop of an Eagle. He was flying slowly across at a height over the deep gully through which we were travelling, when suddenly, like a stone, down he came and, shooting obliquely, struck a bank within fifty yards of us behind a cottage. He seized a Leveret; but the little creature slipped away from him, and escaped to the ditch below. We were so struck by the sight that we did not think of seizing our guns till the bird was out of reach. The wild rocky hills of the gorge draw closer as we approach the upper wall, that crosses the pass. Another flock

of Partridges attracted my comrades; and I sat down to gaze upon the treeless scene. Something moved to the right, and in an instant a little Squirrel stood on a rock before me, stroking its whiskers with its paws, and glancing at me. In another second, and it was scampering to another rock. I saw several of them, and found it common enough on our return through this pass. It is a ground-species, and seems identical with *Tamias striatus* (Pall.), which occurs also in Amoorland. The Great Wall at the upper gate of the pass is about 25 feet high by 16 broad, with turrets along it at a distance of every 120 yards; it stretches away along the ridges of the hills, to the right and left, out of sight. The wall of the enclosure at the gate was in ruins and deserted, and the pavement under the gate broken up. Two miles more of broken road brought us to the almost deserted walled town of Shato, consisting chiefly of bad inns. We went through it, and put up at an inn of a better class in the suburbs beyond. The country about was desolate-looking, composed of sand and gravel, in which some travellers have found marine shell. Growing out of the side of a cliff was a bushy tree, in which a pair of Choughs had made their roost. They were too shy for us; but later on our march we got several specimens, and found the species to be the European *Fregilus graculus*, L. (iris liver brown), called by the Pekinese *Hung-tsuy Yatsze* (Red-billed Crow).

In the afternoon of the 21st we reached Hwailai Hien, the hills having receded, and the country become more open and better cultivated. A small river runs to the south past this city, and is spanned by what was once a fine bridge of seven arches, leading to a gate in the city-wall. We dismounted, and walked along the river. We saw a Heron (*Ardea cinerea*), some Snipe, Golden Plover, and a large flock of Rooks (*Corvus pastinator*, Gould). Passing a mud-walled city, we continued, along a bad, stony road, to Shaching (or the Three Cities), where the inns were many and excellent. On the way we passed dilapidated towns and the ruins of limekilns, among which pigeons were breeding in very large numbers in a feral state. We shot several, and found that the reversion was not to the plumage of the Rock-pigeon of the country, *Columba rupestris* (Bp.) with a white bar to its tail, or to the ashy-rumped bird of India, *C. intermedia*, Strickland, but to the pure "Rock" of Europe, *C. livia* (L.). It must be from Europe, then, that the Chinese derived their breed of Pigeons. Iris light yellowish-chestnut. From our last roost to Shaching was reckoned seventeen miles.

On leaving Shaching (22nd September) we made for the N.W. corner of the hills on our right; to the left was a cultivated plain, with the Wenho (river) winding southwards through it, and barren-looking hills beyond. To the north of the walled town of Keming Yih a hill rises about 2000 feet, with a temple on its top. These hills are very bare of vegetation, covered with broken rock, and yield coal. Notwithstanding their sterility, the Chukar Partridge found them a pleasant retreat, and we were constantly breaking from the line of march to follow the chuckling that burst close above us. Flocks of

Swallows, *H. gutturalis* and *H. daurica*, were constantly seen; but passing the Keming Hill another species appeared on the scene. I detected it at once to be the *Cotyle rupestris* (Scop.). Its larger size, greater breadth of wing, and broader rump distinguished it, while flying, from the *C. riparia*. It occurred in small parties, perching and playing about the rocks. We saw them several times during this expedition. Iris liver-brown; wing extending half an inch beyond tail. Along the base of this hill-range the road reaches a gorge made by the hills on the left advancing, with the river racing through between over rocks and shallows. Emerging from the gorge, a large hilly patch of sand occurred, sparsely sprinkled with coarse grass. It was riddled with holes; and little rat-like creatures were standing on hind legs, or popping their heads out of the holes, or gambolling after one another, just as I have since seen the prairie-dogs do on my railway transit across the continent of America. A shot fired among them, and all disappear like magic. They move fast, but awkwardly, somewhat like Guinea-pigs. Their burrows twist and turn in the descent, so that one cannot reach down with a stick. One came skeltering along, squeaking, with another in pursuit, on to a grass patch. I secured it. Its irides were brown. It appears to be the animal that M. Milne-Edwards has figured in his outcoming 'Recherches des Mammifères' as *Spermolegus mongolicus*, and that from Amoorland, figured in Middendorff's 'Sibirische Reise' as *Arctomys (Sperm.) eversmanni* (Brandt). My specimen is light brown above, cream-colour below and along the sides. The tail is short, the first half inch of its length with short reddish hair, the rest with lengthened hair expanding into a spatula-shape, rufescent at its roots, a broad black ring on its centre, with broad creamy tips. Both Middendorff and Milne-Edwards in their figures convey a good idea of its appearance. A young specimen that I have from Peking has the upper parts much darker and ruddier, and the underparts buff-coloured; tail rufous, with short hair throughout. M. Gill, the amateur naturalist attached to the French camp, procured this animal in 1860 near Peking.

Over some tough stony hills we reach Heangshuypoo, twenty-three miles from our morning's start; and as there was still daylight, we pushed on over worn roads until, benighted, we were obliged to put up in a filthy cattle-stall at the dirty village of Neho-tsze, six miles further on. Dozens of carters and country roughs cooked, ate, smoked, and talked all night in our cabin, while a storm made the darkness horrible outside. We managed to pig it somehow, and survived the night.

Next morning (September 23) we trailed through the mud for the remaining five miles, and put up in an inn in the suburb outside the wall of Seuenhwafoo, the capital of this prefecture. It rained all day, and was cold and wretched. At this city the Roman Catholics have a prosperous mission, with European priests resident; and it was here that Père David got a great many of his good things. The streets were under water; so we had much difficulty in wading through the town. In one of its thoroughfares some live birds were offered

for sale ; the best were *Garrulus brandti*, *Eophona personata*, *Leucodipterum sinense*, and *Acridotheres philippensis* (the last two from the south).

We travelled, on the 24th of September, the remaining twenty miles and reached Kalgan, or Changchiakow. Near this town the road again became stony, and the hills closed round to form the long pass which gradually ascends for thirty miles, until it places you on the boundless grassy plain of Mongolia. We passed many parties of Mongols with strings of camels, and driving troops of ponies, and several of their encampments. Crossing the Tungkeao (bridge) which spans the stream that runs down from the pass, we put up at a Mahomedan inn outside the city-wall.

On the 25th our Mahomedan host took us for a walk to show us the lions. Lower Kalgan, or Hiapoo, is the walled city of Wanstsen Hien. The road leads past this town to Upper Kalgan, or Shangpoo, about three quarters of a mile distant, at the end of which, in a short gorge, is the gate of the famous or old Great Wall. Up the hill on either side runs the wall, or rather its ruined remains—in many places little more than a line of rubble ; but up the mountain and down into the valley, as far as the sight can strain, it holds its serpentine course. The wall of the Nankow Pass supplements this, enclosing the prefecture of Senenhwafoo, which belongs to the Chili province, but is still often called Mongolia. Our host told the guard of the gate who we were, and took us outside of China. Beyond the gate the pass was divided into two by a lower hill-range, with roads on each side which united further upwards. The roads were broken and rough in places, made of slabs of stone which had got displaced ; and the hills were barren and had a scorched look like those of Aden. We were not tempted to continue our journey in jolting carts, and preferred spending our few extra days of leave in returning leisurely by the way we had come. Rooks, Magpies, and Kites were common about Kalgan, and *Reguloides superciliosus* and the Pied Woodpecker were the most frequent birds in the trees about the gardens in her suburbs. One of the latter I fired at died clinging to the top bough of a tree, and there was no getting it down.

We spent the morning of the 27th of September strolling about the neighbourhood of Keming. In the fields towards the river Rooks and Jackdaws were feeding ; all the Rooks appeared to have feathered chins. Among the willows we found the Barbary Dove (*Turtur risorius*, L.). We frequently came across this species in this prefecture of Senenhwafoo between the two walls, as also *Turtur gelastes* (Temm.). In the neighbourhood of Peking the latter occurred, but not the former ; and, indeed, I have never seen the Barbary Dove in any other part of China. It is a tame, gentle bird, and easily approached. I procured both full-plumaged young without the neck-ring and adult birds. Its eyelid is pale yellow, iris chestnut-red ; bill brownish black ; legs madder-pink, with black claws. *Turtur gelastes* has the eyelid deep madder-pink, iris golden-sienna ; bill brownish madder, browner on apical half ; legs purplish madder, with black claws. Some little birds among the willows were uttering

a plaintive "teo" note. I shot one, and found it to be the *Reguloides proregulus* (Pall.). I also shot a *Phylloscopus fuscatus* (Blyth) creeping tamely about the grass. Pied Woodpeckers were common; and we got several. Snow lay on the distant peaks to the north-west. We made for the temple-crowned mountain. As we approached the road under it a flock of Chukars (*Caccabis chukar*) flew up from the corner of the stubble and took to the hill. We pursued, and had some good sport. The Chinese rightly enough name this the *Shihke-tsze*, or "Rock-fowl." Well up the hill-side a party of red-tailed birds were disporting, flying from rock to rock with loud notes. One was shot, and turned out to be a new form of *Accentor*, allied to *A. alpinus*, L. I exhibited it to this Society on the 24th of February, 1870, and proposed to name it *Accentor erythropygus**. We saw a few of them later in the Nankow Pass. On this hill we came upon another interesting bird; it was a Sparrow-like species of *Carpodacus*, of a sandy-grey colour tinted with rose. There were two together, of similar colour and form. We secured the male: iris black; bill light brownish horn-colour; legs liver-brown, ochreous on soles, with deep-brown claws.

The museum at Paris has received specimens of this species from Père David; but it has been there confounded with the *C. obsoletus* (Licht.), a species with a largish black bill (*cf.* *Nouv. Arch. du Muséum*, t. iii. p. 31). I find its nearest ally to be the *C. githagineus* (Licht.) of N.E. Africa, from which, however, it can at once be distinguished by its smaller bill. I will name it

CARPODACUS MONGOLICUS, sp. nov.

Male. Upper parts sandy grey, browner on the crown and back; feathers of the crown, back, and scapulars with brown centres; wing-feathers blackish brown, greater coverts broadly margined with rose-colour, the primary quills more narrowly, and tipped with creamy white, the brown of each feather paling near the white; secondaries broadly margined with cream and tipped similar to the primaries; tail deep brown, whitish on edges of inner webs and broadly edged on outer with cream-colour; sides of neck, throat, breast, and flanks light sandy brown; rest of underparts cream-white. Rose tinges the sides of the head, forehead, throat, cheeks, breast, flanks, and rump, brightest on the last.

Length about 5·3 inches; wing 3·63; first quill ·05, the longest; tail 2·3, forked; centrals ·3, shorter than outermost; upper tail-coverts extend to ·65 from the tip of the tail; bill ·34 in length, ·2 in breadth, ·29 in depth; tarse ·66; middle toe ·52, its claw ·24; hind toe 28, its claw ·26.

Near Shato, on the 28th, a small Owl showed itself on the top of a ruined brick-kiln, with wings expanded, basking in the sun. It was easily bagged. On our way out I had also seen one exposing itself on a ruin during the day. It turns out to be a new form of *Athene*, most nearly allied to *A. glaux* (Sav.) of S. Europe, in its pale colour, but differs from that as well as from *A. noctua* (L.) of N. Europe, and

* See *antèa*, p. 124, Pl. IX.

A. bactriana (Blyth) of Thibet, by its short tarse covered with long down, and by its well-clothed toes. I propose to distinguish it as the

ATHENE PLUMIPES, sp. nov.

Throat white, the white extending in crescent-form up each cheek in rear of ear-coverts (the lower white neck-ring of *A. noctua* is wanting); lores, round eye, and middle of belly also pure white; upper parts light reddish brown, with drops of reddish white on the head, and marked and spotted much as in *A. noctua*; underparts, leg-, and feet-feathers cream-colour, on the breast and flanks broadly streaked with reddish brown, like *A. glaux* (*A. noctua* being spotted with white on a dark ground and wanting the white on the centre of the belly); bill yellow tinged with green; irides light yellow; claws blackish brown.

Length about 8·5 inches; wing 6·2, of similar-proportioned quills to those of *A. noctua*; tail 3·6, of twelve equal feathers; tarse to base of hind toe ·85, densely clothed with down-like feathers, ·65 long; feet covered with shorter hair-like feathers, just showing scales at end of toes; soles bare and yellow.

Towards evening, as we drew near to Shato, very large flights of *Erythropus amurensis* (Radd.) and *Falco cenchris* (Naun.) appeared in the skies overhead, flying high to and fro and round like Swallows about the temples in the western hills; they were also to be seen at this season in large numbers preparatory to their migration. They must, however, wind away south-westwards, as they do not appear on the southern coast of China.

In the Nankow Pass we saw Eagles again, a small number of *Urocissa sinensis* (L.), and a single *Eophona personata* (T. & S.). One of my comrades shot the last, and had a piece of his finger nearly bitten out by the formidable mandibles of the bird. I noticed that the Crows here pursue and torment the Eagles just as fearlessly as they do the Kites in Southern China.

On the 30th of September we reached Peking just before the shutting of the gates.

In the last visit I paid to the museum I found a native with a live Nutcracker for sale. I engaged this man to collect for me, and through him got some very good things. He had worked for Père David. It was a pity that I had not got hold of him before, as now my time was getting short. He brought me three Nutcrackers, all females, of the European *Nucifraga caryocatactes* (Pall.), called by the Chinese the *Tsung hwa'rh*, or "Onion-flower." Irides dark, liver-brown, the same colour as the crown of their heads; bill, legs, and claws blackish brown.

Hawfinch, *Coccothraustes vulgaris*, ♀: iris light yellowish brown tinged with grey. *Zosterops erythopleura*, mihi: the female has less red on the flank than the male; bill light bluish grey, marked with black on upper mandible; legs deeper bluish grey.

Accipitor palumbarius, ♂. Bill brownish black, bluish grey at base; cere king's yellow marked with blackish brown, rictus king's yellow; inside of mouth light purplish blue marked with black; eyelids

black, iris fine clear yellow; legs and toes clear yellow, with black claws.

Left Peking on the 7th of October, and reached Chefoo by steamer on the 12th, where I spent a day or two. While out for a walk, put up a *Chefoo* Hare. This Hare is sent by the European residents at Chefoo to their friends in the south, and is a great treat when compared with the small species *Lepus sinensis* (Gray), which is the ordinary Chinese animal. It is, when cooked, as fully flavoured as the English Hare, and in general appearance greatly resembles it, but is smaller and varies in the colour of its fur from the brightness of *Lepus timidus* (L.) to a ruddy cream-colour. I have several specimens of its skin and skull, and I cannot distinguish it from *Lepus tolai*, Pall. Père David procured it in the neighbourhood of Peking, where I found the smaller and harsher-haired *L. sinensis* the prevailing species; and he also reports it common in Mongolia. My brightest specimen (♀) has the head pale rufous-brown, deeper on the forehead and crown, and somewhat yellow on the outer surface of the ears, all mottled with black, the black appearing in an irregular streak or two on the cheeks; the upper lips, chin, throat, and circle round the eye produced backwards in the form of a half eye-brow, are creamy white; moustache-bristles white, some of them brown near their bases; inner surface of ear rufous cream-colour; back of ear pale fawn-colour, with a broad brownish-black tip; on the hind neck behind the ears an unmottled light rufous patch occurs; back yellowish rufous, with most of the hairs broadly tipped with black; these hairs are dark brown towards their bases, with thick brownish-white down; rump and sides of thighs unmottled creamy rufous; tail black on upper surface; beneath white, as are all the underparts to the fore legs. Under neck, chest, sides of body and legs yellowish rufous, the fore legs with a creamy patch above the paws, and the inner surface of hind legs and feet creamy white. Long hairs are scattered over the upper parts.

	in.
Length from muzzle to root of tail	19
——— of tail (including .75 of tip-hair)	3
——— of head	4
——— of ear	3.80
——— of fore leg from shoulder	6.75
——— of hind leg from hip	9
——— of skull	3.54
Width of skull (arch to arch)	1.63
——— between orbits	1.1
Length of nasal bones	1.53
Width of ditto behind81
——— of ditto in front53
Length of incisive opening88
Width of ditto behind43
Length of the six upper molar teeth together65

A second specimen (♂) is lighter and more cream-coloured, with

the light-rufous hairs of the upper parts the same colour throughout, and only occasionally tipped with black. The ear at the back has only an apical margin of black; and the animal answers to Waterhouse's description of *L. tolai* (Mammalia, vol. ii. p. 48).

A third (♀) is paler, duller, and more dingy throughout than the last, with very little rufous, and its back is more mottled with black; but its apical ear-patch is as conspicuous as in the first. All three are from the same locality, and it cannot be doubted are of the same species; yet they vary so much in coloration. Their skulls, moreover, are of nearly similar form.

I have only fallen across two other mammals (not to speak of Bats) in North China not alluded to in this paper; and these are a Hedgehog and a Mole, which I procured when with the troops at Peking in 1860. I sent a specimen of each to this Society, and they were presented to the British Museum. Dr. Gray pointed out that the Mole was a new species, but did not assign it a name (P. Z. S. 1861, p. 390). Some years after, the Abbé David sent the Mole to Paris, and M. A. Milne-Edwards has described it as *Scaptochirus moschatus*. The Hedgehog Dr. Gray considered to be *Erinaceus collaris* (Gray) of South India; but it seems to me to be distinct from any thing yet described.

Erinaceus dealbatus, sp. n. from Peking. About the size of *E. europæus*, its nearest ally; much paler; spines shorter and thinner, and all setting backwards, pale brown, whitish at bases and tips; ears shorter, narrower, and more hidden; hair of underparts shorter, of a whitey-brown colour, with rufescent down at roots; face whitey brown, with brown ears (no black on the muzzle and round eyes as in *E. europæus*); feet small, pale brownish (and not black), with horn-coloured short claws.

The skull, which is that of an adult, shows a shorter muzzle; the molars in both jaws are comparatively smaller; the fronto-parietal suture occurs much further back; the frontal bones are longer and flatter, and the orbital prominence further back; the molar slopes gradually backwards, making a much less angle at its junction with the temporal. The skull is too injured to enable me to give measurements; but enough remains to show that it is distinct from that of *E. europæus*, with three of which I have compared it.

We left Chefoo by steamer on the night of the 17th October. The 18th was calm and fine; and the following birds appeared about the ship:—1 *Asio brachyotus*, 1 Skylark, 2 *Emberizæ personatæ*, 1 *Calliope*, 1 *Ianthia cyanura*, 1 *Ruticilla aurea*, 1 *Coccothraustes vulgaris*, 1 *Butalis cinereo-alba*, 1 Pied Wagtail, and a Thrush. The last, while following the vessel, fell exhausted into the sea. Four male Gold-crests came into the ship, and were so tame that they were easily caught. Bill deep blackish brown; legs yellowish brown, with much lighter toes. In the older birds the shanks are deeper-coloured, and the toes light orange-brown with an orange-yellow wash on soles, the plumage brightens, and the yellowish green on the back mounts higher up. We were within 100 miles of the Shantung coast, which was our nearest land; and it is reasonable to

suppose that the birds wandered to us from there. I have never heard of the Gold-crest occurring in China; but this will be sufficient authority to enable us to enrol it on our list. The species is very close to the European *Regulus cristatus*; but Bonaparte separates it as *R. japonicus*. It has purer white on the lores and round the eye, and the hind neck is strongly tinged with grey.

On the 20th October we lauded at Shanghai, and so finished our cruise to Peking and our glimpse at the Northern fauna.

9. On the Saiga Antelope, *Saiga tartarica* (Pall.). By JAMES MURIE, M.D., F.L.S., F.G.S., &c., late Prosector to the Society.

In the twelfth fasciculus of the 'Spicilegia Zoologica' of P. S. Pallas (published at Berlin in 1777—that is, nearly a hundred years ago) will be found not only an erudite historical and descriptive account of the *Antilope saiga*, considered in its external bearings, but also a very accurate *résumé* of all the anatomical structures of value as regards classification. The author likewise has figured the skull, stomach, and gall-bladder.

Pallas's observations, to my mind, contain the kernel of all that is useful for zoological purposes*. As, however, there still remain points that seem worthy of investigation, I proceed forthwith to tender, as a communication, notes upon two specimens which have come under my inspection.

I may crave indulgence, under these circumstances, as, if some of the data I bring forward are not entirely new, they are doubtless not generally known. A benefit towards science may result from recognizing the correctness of Pallas's statements; whilst a fresh investigation, entering more into detail in some structures, at least admits of a reconsideration of the animal's affinities.

For the latter reason, and because a fuller description of this recent but ancient-like type of mammal may serve as a basis of future comparison to palæontologists as well as zoologists, I have written a lengthy account of the skeleton, which the naturalist above referred to briefly sketches rather than describes. The skull, in particular, offers several points of departure from the Antilopidæ, among which the Saiga is classed; and thus the taxonomic bearings of such aberrance is a factor of some importance.

I. THE SKELETON.

1. *Spine and adventitious Bones.*

(A) *Vertebræ*.—The spinal column consists of 7 cervical, 13 dorsal, 6 lumbar, 4 united sacral, and 12 caudal elements, in all equal

* Glitsch, I may mention, recently has usefully supplemented Pallas in a paper on the *Saiga*, chiefly devoted to its geographical distribution (*vide* Bull. Soc. Hist. Nat. Moscou, 1865, pp. 207–245).